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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,434

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128891

9428

25944 7590 03/12/2012  
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EXAMINER

LEE, CYNTHIA K

ART UNIT

PAPER NUMBER

1726

NOTIFICATION DATE

DELIVERY MODE

03/12/2012

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction25944@oliff.com  
jarmstrong@oliff.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/589,434	OTA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	CYNTHIA LEE	1726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/21/2012 has been entered.

***Response to Amendment***

This Office Action is responsive to the amendment filed on 9/21/2011. Claim 6 has been canceled and claim 9 has been added. Claims 1-5, 7-9 are pending. Applicant's arguments have been considered and are persuasive. Claims 1-5, 7-9 are non-finally rejected for reasons stated herein below.

***Claims Analysis***

Under the broadest reasonable interpretation of the limitation "configured to," it has been interpreted to be claim language that suggests or makes optional but does not require the steps to be performed. Because the instant claims are apparatus claims drawn to an apparatus, the controller language of claims 1, 4, 5, 9 are functional language and imparts intended use to the structural features of the product. Therefore, while the intended use language of the claim has been considered, it is noted that prior art meets the limitation if the prior art is capable of performing the functions as claimed.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mufford (US 6186254) in view of Wheat (US 6727013).

Mufford teaches a resistor that functions as a block heater that prevents the fuel cell stack from freezing and facilitates start-up in cold weather. Fuel cell power from the fuel cell stack may also be used to supply electricity to the resistor. Fuel cell power may be advantageously used to power the resistor soon after start-up to bring the cell stack within the preferred operating temperature range and during operating to improve fuel cell performance by maintaining the fuel cell stack within the preferred temperature range especially when the motor vehicle is operated in cool ambient temperatures (4:35-45).

Regarding the limitation “the control device is configured to, during the power generation state: perform a first determination as to whether to stop a power generation operation during intermittent operation based on a temperature of the fuel cell”,

under the broadest reasonable interpretation of the limitation “configured to,” it has been interpreted to be claim language that suggests or makes optional but does not require the steps to be performed. Because the instant claims are apparatus claims

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drawn to an apparatus, the language "configured to" is functional language and imparts intended use to the structural features of the product. Therefore, while the intended use language of the claim has been considered, it is noted that Mufford is capable of performing the functions as claimed because Mufford discloses the ability to operate the fuel cell based on the temperature of the fuel cell.

Mufford alone does not have the capability of performing the limitation of claim 1:

“perform a second determination as to whether to stop the power generation operation during the intermittent operation based on at least a temperature of a specific component that is external to the fuel cell and that contains moisture, and

continue the power generation operation when it is determined not to stop the power generation operation in the second determination, although it is determined to stop the power generation operation in the first determination, and

the temperature of the specific component is measured while the operation of the fuel cell system is being carried out”.

Mufford teaches water as a cooling medium to regulate the fuel cell temperature (2:5-20). Mufford has a water tank 175 (fig. 1). Wheat discloses of measuring the temperature of the stack, the ambient temperature, and the water tank temperature to determine if heating is necessary to prevent freezing of the fuel cell (3:25-32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to measure the temperature of the water tank, as taught by Wheat, to heat the fuel cell stack for the benefit of preventing freezing. Hence, the combination of Mufford and Wheat is capable of performing the claimed functional language because the

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combination of Mufford and Wheat allows for the temperature of Mufford's water tank to be measured (Applicant's specific component).

Regarding claim 2, the water tank 175 of Mufford is a passage arranged on a flow path for fuel and oxidant 180 and 185 (fig. 1).

Regarding claim 3, the temperature of the specific component is measured directly by a temperature sensor provided corresponding to the water tank.

Regarding claim 4, the temperature of the specific component is measured indirectly based on the external air temperature because the ambient air affects the water tank temperature.

Regarding claims 5 and 9, the combination of Mufford and Wheat is capable of performing the claimed functional language.

Claims 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mufford (US 6186254) in view of Wheat (US 6727013) as applied to claim 1, further in view of Schell (US 659671).

Mufford modified by Wheat does not disclose the limitations of claims 7, 8.

Regarding claim 7, Schell discloses a fuel cell system comprising,

an electricity storage device that stores electrical power generated by a fuel cell, the electrical storage device serving as a first electrical power supply source to a consumption device which consumes electrical power, the fuel cell serving as a second

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electrical power supply source to the consumption device which consumes electrical power (2:30-55).

Regarding claim 8, Schell discloses a fuel cell/battery vehicle wiring system.

It would have been obvious to one of ordinary skill of art at the time the invention was made to form the fuel cell system of Mufford and Wheat as a hybrid system of Schell for the benefit of providing power in a hybrid vehicle.

### ***Response to Arguments***

Applicant's arguments filed 9/21/2011 regarding Pearson have been considered but are moot in view of the new interpretation of the prior art.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CYNTHIA LEE whose telephone number is (571)272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-12922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cynthia Lee/  
Primary Examiner, Art Unit 1726